COE 4.2 Java Integration

DII COE Developer's Conference
23 May 2000

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Java 1.2 Roadmap: New Features and Functionality

This list shows the Java 1.2 areas that are either new or enhanced. Areas flagged New were not available in Java 1.1. All other areas are enhanced for Java 1.2 over what was available in Java 1.1.

- Performance enhancements
- Security Architecture enhancements
- Cryptography API enhancements
- Java Foundation Classes (JFC) enhancements:
  - Swing: New
    - GUI Components and Services
    - Pluggable Look and Feel
    - Accessibility
  - Drag and Drop New
  - Java 2D enhancements
- JDBCTM enhancements
- Java IDL New

Java 1.2 Roadmap: New Features and Functionality - cont.

This list shows the Java 1.2 areas that are either new or enhanced. Areas flagged New were not available in Java 1.1. All other areas are enhanced for Java 1.2 over what was available in Java 1.1.

- JavaBeans (tm) enhancements
- Audio enhancements
- Internationalization enhancements
- Input Method Framework New
- Remote Method Invocation (RMI) enhancements
- Serialization enhancements
- Collections enhancements New
- Reference Objects New
- Reflection enhancements
- Java Native Interface (JNI) enhancements
- Java Extensions Support New
- Java ARchive (JAR) enhancements
- Version Identification enhancements
- Java VM Debugger Interface New

Java/Swing - Release Information

Swing API Version	Corresponding JFC 1.1 Release	Corresponding Java 2 Platform Version (Standard Edition)	Comments
Swing 1.0.3	JFC 1.1 (with Swing 1.0.3)	*none*	The release of JFC 1.1 included in **Java Plug-in™ 1.1.1**.
Swing 1.1 *Note: This is the API this trail covers.*	JFC 1.1 (with Swing 1.1)	v 1.2, v 1.2.1	The first releases containing the final Swing 1.1 API supported for use in shipping products. **Java Plug-in 1.1.2** and **Java Plug-in 1.2** provide applet support for JDK 1.1 + Swing 1.1 and Java 2 Platform v 1.2, respectively.
Swing 1.1.1 *Note: This trail includes notes about this API.*	JFC 1.1 (with Swing 1.1.1) *Note: This is the last release that supports JDK 1.1.*	v 1.2.2	Adds performance enhancements, many bug fixes, and selected new functionality (requiring no API changes) to Swing 1.1. **Java Plug-in 1.1.3** and **Java Plug-in 1.2.2** provide applet support for JDK 1.1 + Swing 1.1.1 and Java 2 Platform v 1.2.2, respectively.
no separate "Swing" version number	*none*	v 1.3 Beta	Adds significant performance enhancements and bug fixes, along with some new features and API additions. For more information, see the release documentation◆, especially Swing Changes and New Features◆. Java Plug-in 1.3 Beta provides applet support for this release.

COE Java - Release Information

Java Runtime Environment (JRE) on COE 4.2							
Segname	Prefix	Version	O/S Platform	Delivered	Type	SWING Version	Source
Java Platform 1	JAVA1	4.0.0.0/1.1.8	NT 4.0	Yes	JRE Production	1.1 & 1.0.3	SUN
Java Platform 1	JAVA1	4.0.0.0/1.1.7	Solaris 7.0	Yes	JRE Production	1.1 & 1.0.3	SUN
Java Platform 1	JAVA1	4.0.0.0/1.1.7	HP-UX 10.20	Yes	JRE Production	1.1 & 1.0.3	HP
Java Platform 2	JAVA2	4.0.1.0/1.2.2_01	NT 4.0	Yes	JRE Production	1.1.1	SUN
Java Platform 2	JAVA2	4.0.0.1/1.2.1_04	Solaris 2.5.1/7	Yes	JRE Production	1.1	SUN
Java Platform 2	JAVA2	4.0.1.1/1.2.2_05a	Solaris 7 only	Yes	JRE Production	1.1.1	SUN
Java Platform 2	JAVA2	N/A	HP-UX 10.20	No Vendor Avail.		N/A	
Java HotSpot SV	JHOTSV	4.0.0.0 / 1.0.1	NT 4.0	Yes	Server		SUN

COE 4.2 Java Integration

JAVA1 Important Considerations

Setting up your Environment for using the JAVA1 segment:

The JAVA_HOME variable stores the location of the Java Platform 2 segment. This directory becomes the base of the directory tree containing the Java Runtime Environment. The Java Platform 1 segment resides in the following directory: `/h/COTS/JAVA1`

JAVA_HOME should be set to indicate this. In Bourne/Korn shell, this can be accomplished with the following commands:

`JAVA_HOME=/h/COTS/JAVA1`

`export JAVA_HOME`

In the Java Runtime Environment, version 1.1.7 and earlier, the executable responsible for loading and executing Java classes is named `jre`. (In Java 2, it was renamed to `java` to match the executable included in the Java Development Kit.) The JRE binaries can be found in the following directory:

`/h/COTS/JAVA1/bin`

The Java binaries can be found in the following directory: `/h/COTS/JAVA1/bin` The java executable can therefore be invoked with the following command:

`${JAVA_HOME}/bin/jre -classpath ${CLASSPATH}` *java_app*

where the following is true:

`${JAVA_HOME}` is the topmost directory of the Java Platform 2 segment (defined earlier)

`${CLASSPATH}` is a variable containing all of the required classes for the application
java_app   *java_app*   is the class file of the application to be launched

JAVA1 Important Considerations - cont.

Setting up your Environment for using the JAVA1 segment:

CLASSPATH variable stores a list of Java class directories and jar files required by the application. As a minimum, all Java applications will require the following classpath setting:

```
CLASSPATH=.:${JAVA_HOME}/lib/rt.jar
export ${CLASSPATH}
```

This CLASSPATH setting tells the Java interpreter to look for class files starting in the current directory and then the file `rt.jar` (in which the Java Runtime Environment's core classes are contained). To search for classes in additional locations, simple append the classes' path to the CLASSPATH. For example, to add the classes contained in the directory /h/example/ex1 and the classes contained in the jar file `/h/examples/foo.jar`:

```
CLASSPATH=${CLASSPATH}:/h/examples/ex1:/h/examples/foo.jar
export ${CLASSPATH}
```

The Java Platform 1 segment includes two versions of the JFC / Swing libraries. This was done to help soften the transition to Java 2 and provide the greatest compatibility base. Developers interested in moving from the Java 1 platform to the Java 2 platform should make use of the JFC / Swing 1.1 libraries since they use the same naming scheme as those found in Java 2.

JAVA1 Important Considerations - cont.

Setting up your Environment for using the JAVA1 segment:

Swing 1.0.3

The Swing 1.0.3 API can be accessed by setting the following environment variable:

```
SWING_HOME=${JAVA_HOME}/lib/swing-1.0.3
export SWING_HOME
```

and including the following jar file in the application's classpath:

```
${SWING_HOME}/swing.jar
```

Additionally, Swing 1.0.3's "look and feel" components can be accessed by including the following jars:

```
${SWING_HOME}/multi.jar
${SWING_HOME}/motif.jar
${SWING_HOME}/windows.jar
```

JAVA1 Important Considerations - cont.

Setting up your Environment for using the JAVA1 segment:

Swing 1.1

The Swing 1.1 API can be accessed by setting the following environment variable:

```
SWING_HOME=${JAVA_HOME}/lib/swing-1.1
export SWING_HOME
```

and including the following jar file in the application's classpath:

```
${SWING_HOME}/swing.jar
```

Additionally, Swing 1.1's "look and feel" components can be accessed by including the following jars:

```
${SWING_HOME}/multi.jar
${SWING_HOME}/motif.jar
${SWING_HOME}/windows.jar
```

JAVA2 Important Considerations

Setting up your Environment for using the JAVA2 segment:

The JAVA_HOME variable stores the location of the Java Platform 2 segment. This directory becomes the base of the directory tree containing the Java Runtime Environment. The Java Platform 2 segment resides in the following directory:
`/h/COTS/JAVA2`

JAVA_HOME should be set to indicate this. In Bourne/Korn shell, this can be accomplished with the following commands:
`JAVA_HOME=/h/COTS/JAVA2`
`export JAVA_HOME`

The Java binaries can be found in the following directory: `/h/COTS/JAVA2/bin` The java executable can therefore be invoked with the following command:
`${JAVA_HOME}/bin/java -classpath ${CLASSPATH}` *java_app*
where the following is true:

`${JAVA_HOME}` is the topmost directory of the Java Platform 2 segment (defined earlier)

`${CLASSPATH}` is a variable containing all of the required classes for the application *java_app*

java_app is the class file of the application to be launched

JAVA2 Important Considerations - cont.

Setting up your Environment for using the JAVA2 segment:

CLASSPATH variable stores a list of Java class directories and jar files required by the application. As a minimum, all Java applications will require the following classpath setting:

CLASSPATH=.:${JAVA_HOME}/lib/rt.jar

export ${CLASSPATH}

This CLASSPATH setting tells the Java interpreter to look for class files starting in the current directory and then the file rt.jar (in which the Java Runtime Environment's core classes are contained). To search for classes in additional locations, simple append the classes' path to the CLASSPATH. For example, to add the classes contained in the directory /h/example/ex1 and the classes contained in the jar file /h/examples/foo.jar:

CLASSPATH=${CLASSPATH}:/h/examples/ex1:/h/examples/foo.jar

export ${CLASSPATH}

The JFC / Swing libraries are included in the core classes provided with the Java 2 Runtime Environment. These classes are compatible with those found in the JFC / Swing 1.1 libraries distributed with the Java Platform 1 segment. No special environment settings are required to make use of the JFC / Swing classes (they are contained in the rt.jar file).

JAVA2 Segment Information

- Required Patches
  - Segment checks to see if required patches are currently installed down to the rev level. If they are not installed, the segment will install them.
  - System Reboot required if patches are installed.
  - Patches vary with every release of the the Java Runtime Environment.
- Production Release
  - Segment incorporates Production Release of Java Runtime Environment.
- OS Support
  - JAVA2 4.0.1.1 supports only Solaris 7
  - JAVA2 4.0.0.1 supports Solaris 2.5.1 and Solaris 7
  - JAVA2 for HP-UX 11.0 is on the board to do
- Segment Name
  - Java Platform 2
- Segment Prefix
  - JAVA2

Java Internet Links

OnLine Books:

Swing

    by: Matthew Robinson and Pavel Vorobiev

    http://manning.spindoczine.com/sbe/

Thinking in Java, 1st and 2nd editions

    by: Bruce Eckel

    http://www.bruceeckel.com/

OnLine Tutorials:

The Java Tutorial

    by: Sun

    http://java.sun.com/docs/books/tutorial/

Java Meterics:

Jmetric (freeware)

    http://jmetric.it.swin.edu.au/products/jmetric/

Tools:

JBuilder 3.5 Foundation for Windows NT, Linux, and Solaris (freeware)

    http://www.inprise.com/jbuilder/foundation/

jProf - a JVMPI based profiler (freeware)

    http://starship.python.net/crew/garyp/jProf.html

The End